# FOREWORD

This pamphlet describes the records that are required to implement USACE's Materiel Maintenance Policies for personal property. It has been written and based on substantial collaboration between many operations and logistics team members representing activities throughout our command, implementing a consensus process. We gratefully acknowledge the efforts of all participants.

Our dedication to the proper use and care of our personal property is instrumental in the successful completion of our missions. This pamphlet offers a variety of maintenance procedures for the individuals entrusted with the care of our equipment. It was intentionally developed to allow the flexibility for each activity to tailor their procedures and still conform to our maintenance policy standards. All of our management team members must become familiar with the policies and procedures we use to acquire, employ, and maintain our property. Equally important, our management team must also direct and oversee the efforts that make proper use and care of our valuable and limited resources, a routine part of our daily responsibilities.

Any inquiries regarding this publication should be addressed to HQUSACE, CELD-MS, Washington, D.C. 20314-1000

FOR THE COMMANDER:

OTIS WILLIAMS
Colonel, Corps of Engineers
Chief of Staff

**Note: New procedures must be implemented within six (6) months from the publication date.**

DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
Washington, D.C. 20314-1000

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# Maintenance of Supplies and Equipment
# PROCEDURAL PAMPHLET
# FOR
# MATERIEL MAINTENANCE POLICIES

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This pamphlet supersedes EP 750-1-1, 29 December 1989

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# CHAPTER 1

# INTRODUCTION

1-1. Purpose. In general, this pamphlet describes the minimum procedures that are required to manage and maintain personal property within USACE. Specifically, it describes the procedures that are needed to implement the USACE maintenance policies and responsibilities defined in ER 750-1-1, as they apply to personal property acquired with Civil and Military funds. Existing manual or automated maintenance management programs may be used to substitute for or replace any method outlined in this pamphlet, as long as pertinent data is captured. This pamphlet also describes the methods required to control and manage personal property and the maintenance program.

1-2. Applicability. This pamphlet applies to all self-propelled, towed, or stationary self-powered personal property, excluding equipment specified in ER 56-2-1 (Administrative Vehicle Management, Civil Works). At the minimum, all equipment with an acquisition value criterion of $5,000.00 or more, is subject to the full requirements and methods contained in this pamphlet. Individual equipment items that are used together and form a system valued at $5,000.00 or more are also subject. Equipment with an acquisition value criterion less than $5,000.00 is not subject to the full requirements and methods herein, but will be maintained in an operational mode.

1-3. References. (See list at Appendix A)

1-4. Distribution. Approved for public release, distribution is unlimited.

1-5. Methods. Methods will be established for the following:

a. Scheduling maintenance, and recording completed maintenance actions.

b. Tracking the condition, status, and operation of personal property.

c. Gathering maintenance information for special studies and projects.

d. Maintaining historical maintenance data.

e. Collecting special maintenance information.

1-6. Responsibilities.

a. Commander, USACE:

(1) Provides command broad guidance for the Materiel Maintenance Program.

(2) Emphasizes the importance of maintenance and ensures that all commanders are held accountable for the conduct of maintenance operations.

b. Director of Logistics, HQUSACE:

(1) Develops concepts, policies, doctrine, and plans for personal property maintenance.

(2) Develops and distributes implementing instructions and procedures to assist commanders in complying with maintenance regulations.

(3) Conducts periodic inspections and staff visits, as appropriate, to determine the adequacy of command maintenance operations, to document deficiencies, and to recommend corrections.

c. Each Activity Commander:

(1) Provides local guidance to their Materiel Maintenance Management Program (MMMP).

(2) Ensures that adequate resources are dedicated to the MMMP and that all maintenance operations in the command are properly supervised.

(3) Appoints a qualified maintenance officer in writing that will oversee the MMMP, as a primary duty.

d. Chief, Logistics Management Office:

(1) Implements HQUSACE guidance and standards and advises the USACE Commander of major changes necessary to improve maintenance policies in the Corps.

(2) Ensures compliance with materiel maintenance standards and the related logistics performance standards.

(3) Develops policies and procedures as necessary to implement the District MMMP.

(4) Assists supervisors in implementing MMMP policies and procedures.

(5) Ensures that equipment disposal inspections are completed.

e. Maintenance Officer: (**See Table 1-1**).

(1) Monitors the maintenance program and advises Chief of Logistics Management of changes necessary to improve local maintenance policies and procedures.

(2) Ensures that materiel maintenance standards are being complied with.

(3) Assists local supervisors in implementing the policies and procedures for the materiel maintenance program.

(4) Is appointed in writing as the Test, Measurement, and Diagnostic Equipment (TMDE) Coordinator and is responsible for developing a TMDE program to ensure compliance with the maintenance plan, regulations, manuals, and bulletins so as to reinforce maintenance discipline. TMDE support activity assignments by USACE element, are listed in **Table 1-2.**

(5) Is appointed in writing as the Oil Analysis Program (OAP) Monitor, who will:

(a) Provide management guidance, technical supervision and assistance to activities affiliated with the division, district, etc.

(b) Ensure that all activities participate in an OAP program (Army OAP Laboratory assignments by USACE element are listed in **Table 1-3.**

(c ) Recommend systems for inclusion in the OAP and sampling intervals for systems.

(6) Manages the activity's warranty program to include all matters related to warranty claim actions (WCA).

(7) Is required to conduct annual site visits and prepare written evaluations and reviews the Materiel Maintenance Program within the district. Annual evaluation will be sent through the Chief, LMO, to the activity commander.

(8) Develops and implements the district maintenance plan, performs annual reviews and posts changes as needed.

f. Maintenance Manager: (Refer to Table 1-1).

(1) Identifies maintenance requirements and ensures that all scheduled and unscheduled maintenance of all personal property is performed expeditiously and by the most economical means.

(2) Oversees the functions of Maintenance Coordinators within their activity.

(3) Prepares and implements the activity's maintenance sub-plans.

(4) Determines resources and personal property specific requirements.

(5) Monitors personal property performance and evaluates the maintenance program.

(6) Ensures all maintenance programs are executed.

g. Maintenance Coordinator: ( Refer to Table 1-1)

(1) Ensures that maintenance data are maintained and transferred to permanent records.

(2) Is responsible for tracking and complying with warranty requirements.

(3) Is responsible for dispatching functions.

(4) Ensures that scheduled and unscheduled maintenance is performed.

(5) Is responsible for upward reporting requirements through maintenance channels.

(6) Is responsible for the maintenance of specific items of personal property or for groups of personal property.

(7) Receives Equipment Maintenance Checks and Services (EMCS) and determines if personal property is operational and safe for use.

(8) Maintains operator/usage records (equipment usage is covered in Chapter 9 and important information is also contained in **Tables 1-4 and 1-5**.

1-5. Explanation of Terms. Words with special meanings for users of this pamphlet are explained in the glossary.

1-6. Types of Records in this Pamphlet.

a. Operational records. Operational records provide the information necessary to plan, manage, and ensure optimum use of personal property. They are covered in Chapter 3 of this pamphlet.

b. Maintenance records. Maintenance records control maintenance schedules and services, inspections, and repair workloads. These records are covered in Chapter 4 of this pamphlet.

c. Oil Analysis Program. Technical information, instructions, and operating procedures for non aeronautical personal property enrolled in the OAP are described in Chapter 5. Policies, objectives, and responsibilities of the OAP are prescribed in Chapter 3 of ER 750-1-1.

d. Equipment historical records. Historical records are permanent forms documenting the receipt, operation, maintenance, transfer, and disposal of individual items of personal property. Chapter 6 of this pamphlet covers historical records.

e. Watercraft Records. Records for floating craft are covered in Chapter 7 of this pamphlet.

1-7. Exceptions. Supplementation of this pamphlet is not authorized.

1-8. General Instructions.

a. Information about forms and records, samples, details about their use and how they are completed are found in Appendix B. Data required by the maintenance plan shall be captured on the sample forms or through other methods. Unless the specific instructions for sample forms say otherwise, the following rules apply:

(1) Forms may be overprinted when the information is repeated each time the form is used for a particular purpose.

(2) Use sample forms and illustrations only as guides and leave unnecessary entries blank.

(3) Disposition instructions are provided for sample forms. Forms may be retained beyond specified use periods when local management requirements or special situations dictate.

1-9. Form Requirements.

a. Forms and records provide a picture of the condition of equipment, its operation and needs. The ultimate purpose of this information is to ensure the equipment is safe and ready to perform its mission.

b. Operators, dispatchers, mechanics and supervisors have an equal stake in properly maintaining the forms.

c. Forms and records will not be redone, merely for neatness. Only remake historical forms and records when the original is lost or so damaged that the information is no longer legible.

**Table 1-1** **Maintenance Responsibility Structure**

| Title | Job Description |
|---|---|
| ***Maintenance Officer*** | 1. Monitors Maintenance Program |
| | 2. Advise Chief of Logistics of Changes |
| | 3. Assures that Materiel Maintenance Standards are Being Complied With. |
| | 4. Assist Local Supervisors in Implementing Policies/Procedures for Materiel Maintenance Program |
| | 5. Appointed in Writing as the Oil Analysis Program (OAP) Monitor, Who Will: |
| | (a) Provide Management Guidance, Technical Supervision/ Assistance to Activities Affiliated With Division/District etc. |
| | (b) Assure all Activities Participate in An OAP |
| | (c) Recommend Systems for Inclusion in OAP/ Sampling Intervals for System |
| | 6. Appointed in Writing as TMDE Coordinator |
| | (a) Responsible to Develops TMDE Program Which Will: |
| | (b) Ensure Compliance with Maintenance Plan, Regulations, Manuals, and Bulletins to Reinforce Maintenance discipline |
| | 7. Manage Activity's Warranty Program |
| | 8. Conduct Annual Site Visits and Prepare Written Evaluations/ Reviews of Materiel Maintenance Program Within District |
| ***Maintenance Officer (Continued)*** | 9. Develops and Implements the Maintenance Plan With Annual Reviews/Changes Posted |
| | 10. Responsible for Equipment Usage Reports |
| ********** | ********** |

| | |
|---|---|
| ***Maintenance Manager*** | 1. Assures Schedule/Unscheduled Maintenance of Personal Property is Performed Expeditiously |
| | 2. Oversees Maintenance Coordinators Functions |
| | 3. Identifies Maintenance Requirements |
| | 4. Prepares and implements Activity's Maintenance Sub-plans |
| | 5. Determines Resources/Personal Property Specific Requirements |
| | 6. Monitors Personal Property Performance and Evaluate Maintenance Program |
| | 7. Assures all Maintenance Programs are Executed |
| | 8. Responsible for Collecting and Recording Cost of Parts, Labor and Contracts for Each Piece of Equipment |
| ********** | ********** |
| ***Maintenance Coordinator*** | 1. Assures Maintenance Data are Maintained and Transferred to Permanent Record |
| | 2. Responsible for Tracking/Complying with Warranty Requirements |
| | 3. Responsible for Dispatching Functions |
| | 4. Assures Schedule/Unscheduled Maintenance is Performed |
| | 5. Responsible for Upward Reporting Requirements |
| | 6. Responsible for The Maintenance of Specific Item(s) of Personal Property or Group of Personal Property |
| ***Maintenance Coordinator (Continued)*** | 7. Receives Equipment Maintenance Checks and Services (EMCS) and Determines Safety of Personal Property |
| | 8. Maintains Operator/Utilization Records |
| ********** | ********** |
| ***Operator*** | 1. Process Upward Reporting as Required |

| | |
|---|---|
| | 2. Reports Operating Irregularities to MC for Action |
| | 3. Reports Repair Parts Used |
| | 4. Responsible for Safe Operation of Personal Property |
| | 5. Performs and Report EMCS |
| | 6. Performs Operator Maintenance |
| ********** | ********** |
| ***Maintenance Activity*** | 1. Perform Maintenance and Repairs |
| | 2. Reports Condition of Personal Property |
| | 3. Reports Parts and Labor |
| | 4. Performs Equipment PMCS |

**Table 1-2 TMDE Support Activity Assignments in USACE**

| USACE Activity | USATA Support Activity |
|---|---|
| **CEHNC-LM**<br>PO Box 1600<br>Huntsville, AL 35807-4301 | **Redstone Arsenal** |
| **CEMVD-LM**<br>P.O. Box 80<br>Vicksburg, MS 39181-0080 | **TSC Anniston** |
| **CEMVM-LO**<br>B-202 Clifford Davis Fed Bldg..<br>Memphis, TN 38103-1894 | **TSC Pine Bluff** |
| **CEMVN-LM**<br>P.O. BOX 60267<br>New Orleans, LA 70160-0267 | **TSC Anniston** |
| **CEMVS-LM**<br>1222 Spruce St.<br>St. Louis, MO 63103-2833 | **TSC Fort Leonard Wood** |
| **CEMVK-LM**<br>2101 N Frontage Rd.<br>Vicksburg, MS 39181-5191 | **TSC Anniston** |
| **CENWD-LM**<br>P.O. Box 103 Downtown Station<br>Omaha, NE 68101-0103 | **TSC Ft. Riley** |
| **CENWK-LM**<br>700 Federal Bldg.<br>601 E. 12th Street Rm. 648<br>Kansas City, MO 64106-2896 | **TSC Ft. Riley** |

| | |
|---|---|
| **CENWO-LM**<br>215 North 17th Street<br>Omaha, NE 68102-4978 | **TSC Ft. Riley** |
| **CENAE-LO**<br>424 Trapelo Road<br>Waltham, MA 02254-9149 | **TSC Ft. Devens** |
| **CENAD-LM**<br>90 Church Street<br>New York, NY 1007-2979 | **TSC Picatinny** |
| **CENAB-LO**<br>P.O. Box 1715<br>Baltimore, MD 21203-1715 | **TSC Aberdeen** |
| **CENAN-LM**<br>26 Federal Plaza, Room 1873<br>New York, NY 10278-0090 | **TSC Picatinny** |
| **CENAO-LM**<br>803 Front Street<br>Norfolk, VA 23510-1096 | **TSC Ft. Eustis** |
| **CENAP-LM**<br>Wannamaker Bldg.<br>100 Penn Square East<br>Philadelphia, PA 19107-3390 | **TSC Ft. Dix** |
| **CELRD-LM**<br>111 N. Canal Street<br>Chicago, IL 60606-7205 | **TSC Ft. Sheridan** |
| **CELRB-LM**<br>1776 Niagara Street<br>Buffalo, NY 14207-3199 | **TSC Watervliet** |
| **CELRC-LM**<br>111 N Canal Street<br>Chicago, IL 60606-7206 | **TSC Ft. Sheridan** |

| | |
|---|---|
| **CELRE-LM**<br>P.O. Box 1027<br>Detroit, MI 48231-1027 | **TSC Warren** |
| **CEMVR-LM**<br>P.O. Box 2004<br>Clock Tower Building<br>Rock Island, IL 61204-2004 | **TSC Rock Island** |
| **CEMVP-LM**<br>190 th Street E.<br>St. Paul MN 55101-1638 | **TSC Ft. McCoy** |
| **CENWD-LM**<br>P.O. Box 2870<br>Portland, OR 97208-2870 | **TSC Ft. Lewis** |
| **CEPOA-LM**<br>P.O. Box 898<br>Anchorage, AK 99506-0898 | **TSC Ft. Greely** |
| **CENWP-LM**<br>P.O. Box 2946<br>Portland, OR 97208-2946 | **TSC Ft. Lewis** |
| **CENWS-LM**<br>P.O. Box 3755<br>Seattle, WA. 98124-2255 | **TSC Ft. Lewis** |
| **CENWW-LM**<br>201 N. 3rd Avenue<br>Walla Walla, WA 99362-9265 | **TSC Ft. Lewis** |
| **CELRD-LM**<br>P.O. Box 1159<br>Cincinnati, OH 45201-1159 | **TSC Richmond** |
| **CELRH-LM**<br>502 Eight Street<br>Huntington, WV 25701-2070 | **TSC Richmond** |

| | |
|---|---|
| **CELRL-LM**<br>P.O. Box 59<br>Louisville, KY 40201-0059 | **TSC Ft. Knox** |
| **CELRN-LM**<br>P.O. Box 1070<br>Nashville, TN 37202-1070 | **TSC Ft. Campbell** |
| **CELRP-LM**<br>William S. Moorehead Fed Bldg.<br>1000 Liberty Avenue<br>Pittsburgh, PA 15222-4186 | **TSC Letterkenny** |
| **CEPOD-LO**<br>Building 230<br>Ft. Shafter, HI 96858-5440 | **ATSD Hawaii** |
| **CEPOF-LO**<br>Far East Unit 15546<br>APO AP 96205-0610 | **ATSD Hawaii** |
| **CEPOJ-LO**<br>UASEDJ Unit 45010<br>APO AP 96343-0061 | **ASTD Japan** |
| **CESAD-LM**<br>77 Forsythe St., SW., Rm. 313<br>Atlanta, GA 30335-6801 | **TSC Ft. Gillem** |
| **CESAC-LM**<br>P.O. Box 919<br>Charleston, SC 29402-0919 | **TSC Hunter Army Air Field** |
| **CESAJ-LM**<br>P.O. Box 4970<br>Jacksonville, FL 32232-0019 | **TSC Anniston** |

| | |
|---|---|
| **CESAM-LM**<br>P.O. Box 2288<br>Mobile, AL 36628-0001 | **TSC Anniston** |
| **CESAS-LM**<br>P.O. Box 889<br>Savannah, GA 31402-0889 | **TSC Hunter Army Air Field** |
| **CESAW-LM**<br>P.O. Box 1890<br>Wilmington, NC 28402-1890 | **TSC Ft. Bragg** |
| **CESPD-LM**<br>630 Sansome Street, Room 720<br>San Francisco, CA 94111-2206 | **TSC Stockton** |
| **CESPL-LM**<br>P.O. Box 2711<br>Los Angeles, CA 90053-2325 | **TSC Los Alamitos** |
| **CESPK-LM**<br>1225 J Street,<br>Sacramento, CA 95814-2922 | **TSC Stockton** |
| **CESPN-LM**<br>211 Main Street<br>San Francisco, CA 94105-1905 | **TSC Stockton** |
| **CESWD-LO**<br>1114 Commerce Street Room 413A<br>Dallas, TX 75242-0216 | **TSC Ft. Sill** |
| **CESPA-LO**<br>P.O. Box 1580<br>Albuquerque, NM 87103-1580 | **TSC White Sands** |
| **CESWF-LO**<br>P.O. Box 17300<br>Ft. Worth, TX 76102-0300 | **TSC Ft. Sill** |

| | |
|---|---|
| **CESWG-LO**<br>P.O. Box 1229<br>Galveston, TX 77553-1229 | **TSC Corpus Christi** |
| **CESWL-LO**<br>P.O. Box 867<br>Little Rock, AR 72203-0867 | **TSC Pine Bluff** |
| **CESWT-LO**<br>P.O. Box 61<br>Tulsa, OK 74121-0061 | **TSC McAlester** |
| **CETAC-LM**<br>P.O. Box 2250<br>Winchester, VA 22604-1450 | **TSC Letterkenny** |
| **CETAE-LM**<br>UNIT 25727<br>APO AE 09242 | **74 Maint. Branch** |
| **CETEC-IM-S**<br>BLDG. 2592<br>Ft. Belvoir, VA 22060-5546 | **TSC Ft. Belvoir** |
| **CETEC-ES**<br>Casey Building, # 2594<br>Ft. Belvoir, VA 22060-5583 | **TSC Ft. Belvoir** |
| **CEWES-LM-Z**<br>3909 Halls Ferry Rd.<br>Vicksburg, MS 39181-6199 | **TSC Anniston** |
| **CECRL-LM**<br>72 Lyme Road<br>Hanover, NH 03755-1290 | **Ft. Devens** |
| **CECER-LM**<br>P.O. Box 9005<br>Champaign, IL 61826-9005 | **TSC Ft. Knox** |

| | |
|---|---|
| **CECPW**<br>7701 Telegraph Rd<br>Alexandria, VA 22310-3862 | **TSC Ft. Belvoir** |
| **CEWRC-LM**<br>Casey Building #2594<br>Ft. Belvoir, VA 22060-5586 | **TSC Ft. Belvoir** |
| **CEHEC-LM**<br>7701 Telegraph Rd.<br>Alexandria, VA 22310-3860 | **TSC Ft. Belvoir** |
| | |

**Table 1-3 Oil Analysis Program Laboratory Assignments in USACE**

| Organization: | Phone: | Laboratory: |
|---|---|---|
| USAE Division, Mississippi Valley | Maintenance Officer (601) 634-7784 | Ft. Polk, LA (FORSCOM) |
| USAE District, Memphis | Maintenance Officer (901) 544-3925 | Ft. Campbell, KY (FORSCOM) |
| USAE District, New Orleans | Maintenance Officer (504) 862-1209 | Ft. Polk, LA (FORSCOM) |
| USAE District, St. Louis | Maintenance Officer (314) 331-8017 | Ft. Riley, KS (FORSCOM) |
| USAE District, Vicksburg | Maintenance Officer (601) 631-7486 | Ft. Polk, LA (FORSCOM) |
| USAE District, Rock Island | Maintenance Officer (309) 794-5217 | Ft. Campbell, KY (FORSCOM) |
| USAE District, St. Paul | Maintenance Officer (612) 290-5222 | Ft. Riley, KS (FORSCOM) |
| USAE Division, Northwestern | Maintenance Officer (503) 808-3717 | Ft. Lewis, WA (FORSCOM) |
| USAE District, Portland | Maintenance Officer (503) 808-4650 | Ft. Lewis, WA (FORSCOM) |
| USAE District, Seattle | Maintenance Officer (206) 764-3724 | Ft. Lewis, WA (FORSCOM) |
| USAE District, Walla Walla | Maintenance Officer (509) 527-7041 | Ft. Lewis, WA (FORSCOM) |
| Missouri River Regional Headquarters | Maintenance Officer (402) 697-2444 | Ft. Riley, KS (FORSCOM) |
| USAE District, Kansas City | Maintenance Officer (816) 426-3480 | Ft. Riley, KS (FORSCOM) |
| USAE District, Omaha | Maintenance Officer (402) 221-3241 | Ft. Riley, KS (FORSCOM) |
| USAE Division, North Atlantic | Maintenance Officer (212) 264-7464 | Ft. Drum, NY (FORSCOM) |
| USAE District, Baltimore | Maintenance Officer (410) 962-4091 | Ft. Eustis, VA (TRADOC) |

| | | |
|---|---|---|
| USAE District, Norfolk | Maintenance Officer (757) 441-7800 | Ft. Eustis, VA (TRADOC) |
| USAE District, New England | Maintenance Officer (617) 647-8794 | Ft. Drum, NY (FORSCOM) |
| USAE District, New York | Maintenance Officer (212) 264-0222 | Ft. Drum, NY (FORSCOM) |
| USAE District, Philadelphia | Maintenance Officer (215) 656-6808 | Ft. Eustis, VA (TRADOC) |
| Great Lakes and Ohio River Division | Maintenance Officer (513) 684-6448 | Ft. Knox, KY (TRADOC) |
| USAE District, Huntington | Maintenance Officer (304) 529-5296 | Ft. Knox, KY (TRADOC) |
| USAE District, Louisville | Maintenance Officer (502) 582-5637 | Ft. Knox, KY (TRADOC) |
| USAE District, Nashville | Maintenance Officer (Acting), (615) 736-5649 | Ft. Campbell, KY (FORSCOM) |
| USAE District, Pittsburgh | Maintenance Officer (412) 395-7463 | Ft. Eustis, VA (TRADOC) |
| Great Lakes Regional Headquarters | Maintenance Officer (312) 353-6400 ext. 1200 | Ft. Knox, KY (TRADOC) |
| USAE District, Buffalo | Maintenance Officer (716) 879-4103 | Ft. Drum, NY (FORSCOM) |
| USAE District, Chicago | Maintenance Officer (312) 353-6400 ext. 1200 | Ft. Campbell, KY (FORSCOM) |
| USAE District, Detroit | Maintenance Officer (313) 226-5358 | Ft. Knox, KY (TRADOC) |
| USAE Division, Pacific Ocean | Maintenance Officer (808) 438-9727 | Pearl Harbor, HI (JOAP Lab) |
| USAE District, Alaska | Maintenance Officer (907) 753-2559 | Ft. Richardson, AK (USARPAC) |

| | | |
|---|---|---|
| USAE District, Far East | Maintenance Officer Comm-011-82-2-274-3779 | Camp Stanley, Korea (USEIGHT) |
| USAE District, Japan | Maintenance Officer Comm-011-81-3117-63-3910 | Camp Carroll, Korea (USEIGHT) |
| USAE Division, South Atlantic | Maintenance Officer (404) 331-4419 | Hunter AAF, GA (FORSCOM) |
| USAE District, Jacksonville | Maintenance Officer (904) 232-2275 | Hunter AAF, GA (FORSCOM) |
| USAE District, Mobile | Maintenance Officer (334) 441-5191 | Ft. Benning, GA (TRADOC) |
| USAE District, Charleston | Maintenance Officer (803) 727-4352 | Ft. Bragg, NC (FORSCOM) |
| USAE District, Savannah | Maintenance Officer (912) 652-5776 | Hunter AAF, GA (FORSCOM) |
| USAE District, Wilmington | Maintenance Officer (910) 251-4643 | Ft. Bragg, NC (FORSCOM) |
| USAE Division, South Pacific | Maintenance Officer (415) 977-8200 | Ft. Lewis, WA (FORSCOM) |
| USAE District, Los Angeles | Maintenance Officer (213) 452-3910 | Ft. Lewis, WA (FORSCOM) |
| USAE District, Albuquerque | Maintenance Officer (505) 342-3130 | Ft. Bliss, TX (TRADOC) |
| USAE District, Sacramento | Maintenance Officer (916) 577-5334 | Ft. Lewis, WA (FORSCOM) |
| USAE District, San Francisco | Maintenance Officer (415) 977-8635 | Ft. Lewis, WA (FORSCOM) |
| USAE Division, Southwestern | Maintenance Officer (214) 767-2334 | Ft. Sill, OK (TRADOC) |
| USAE District, Ft. Worth | Maintenance Officer (817) 978-2275 | Corpus Christi Army Depot (DESCOM) |
| USAE District, Galveston | Maintenance Officer (409) 766-3838 | Corpus Christi Army Depot (DESCOM) |

| | | |
|---|---|---|
| USAE District, Little Rock | Maintenance Officer (501) 324-5650 | Ft. Polk, LA (FORSCOM) |
| USAE District, Tulsa | Maintenance Officer (918) 669-7439 | Ft. Sill, OK (TRADOC) |
| US Army Engineering and Support Center, Huntsville | Maintenance Officer (205) 895-1680 | Ft. Benning, GA (TRADOC) |
| Tranatlantic Programs Center | Maintenance Officer (540) 665-3617 | Ft. Eustis, VA (TRADOC) |
| Tranatlantic Programs Center, Europe District | Maintenance Officer Comm-011-49-611-816-2470 | Mannheim Oil Lab, Germany (USAREUR) |
| US Army Topographic Engineering Center | Maintenance Officer (703) 428-9023 | Ft. Eustis, VA (TRADOC) |
| US Army Cold Regions Research and Engineering Laboratory | Maintenance Officer (603) 646-4324 | Ft. Drum, NY (FORSCOM) |
| US Army Construction Engineering Research Laboratory | Maintenance Officer (217) 373-6799 | Ft. Campbell, KY (FORSCOM) |
| USAE Waterways Experiment Station | Maintenance Officer 601) 634-2509 | Ft. Polk, LA (FORSCOM) |
| USAE Center for Public Works | Maintenance Officer (703) 806-5622 | Ft. Eustis, VA (TRADOC) |
| USAE Water Resources Support Center | Maintenance Officer (703) 428-7166 | Ft. Eustis, VA (TRADOC) |
| USAE Humphreys Engineer Center | Maintenance Officer (703) 428-6549 | Ft. Eustis, VA (TRADOC) |

**Table 1-4 Equipment Usage Tracking List for USACE**

| | Equipment Category Code | Nomenclature | Federal Supply Class |
|---|---|---|---|
| 1 | LE | Boat, Tow | 1925 |
| 2 | LE | Boat, Tug | 1925 |
| 3 | LG | Motor, Outboard, 100 HP and Larger | 2010 |
| 4 | LH | Crane, Barge Mtd | 3950 |
| 5 | LH | Derrick, Crane Barge | 3950 |
| 6 | NB | Distributor, Water, 1000 Gal &Above, Trk Mtd, Eng Driven | 3825 |
| 7 | NB | Mixer, Concrete, Trailer Mounted | 3895 |
| 8 | NB | Mixer, Concrete, Truck Mounted | 3895 |
| 9 | NC | Scraper, Earthmover, Self Propelled | 3805 |
| 10 | NC | Scraper, Earthmover ing, Towed | 3805 |
| 11 | ND | Tractor, Full Tracked, with Backhoe/Loader | 2430 |
| 12 | ND | Tractor, Full Tracked, with Bulldozer, High Speed | 2430 |
| 13 | ND | Tractor, Full Tracked, with Bulldozer, Low Speed | 2410 |

| | | | |
|---|---|---|---|
| 14 | ND | Tractor, Wheeled, Industrial, with Bulldozer | 2420 |
| 15 | ND | Tractor, Wheeled, Industrial, with Backhoe/Loader | 2420 |
| 16 | ND | Tractor, Wheeled, Industrial, with Bulldozer | 2420 |
| 17 | NE | Grader, Road Motorized (All) | 3805 |
| 18 | NF | Crane, Crawler Mtd | 3810 |
| 19 | NF | Crane, Truck Mtd | 3810 |
| 20 | NF | Crane, Wheel Mtd | 3810 |
| 21 | NF | Crane Shovel, Crawler Mounted | 3810 |
| 22 | NF | Crane Shovel, Truck Mounted | 3810 |
| 23 | NF | Excavator, Multi-Purpose, Crawler Mounted | 3805 |
| 24 | NF | Excavator, Multi-Purpose, Truck Mtd | 3805 |
| 25 | NG | Loader , Scoop, Engine Driven, Full Tracked | 3805 |
| 26 | NG | Loader , Scoop, Eng Driven, Wheel Mtd | 3805 |
| 27 | NH | Roller, Motorized, Engine Driven | 3895 |

| | | | |
|---|---|---|---|
| 28 | NH | Roller, Vibratory, Self Propelled | 3895 |
| 29 | NJ | Drill, Machine, Truck Mounted | 3820 |
| 30 | NJ | Drill, Machine Truck Mounted | 3820 |
| 31 | NJ | Truck, Well Drill Support | 3820 |
| 32 | NN | Truck, Concrete Mixer, CCE | 3895 |
| 33 | NN | Truck, Dump, CCE, 20T | 3805 |
| 34 | NV | Auger, Earth, Skid Mtd, Engine Driven | 3820 |
| 35 | NV | Auger, Earth, Truck Mtd, Engine Driven | 3820 |
| 36 | NV | Compactor, Motorized (HS) | 3805 |
| 37 | NV | Ditching Machine, Engine Driven | 3805 |
| 38 | NV | Hammer, Pile Driven Self Powered, (All) | 3895 |
| 39 | NV | Sweeper, Rotary, Self Propelled | 3825 |
| 40 | PA | Crane Truck, Warehouse, Electric | 3810 |
| 41 | PA | Crane Truck, Warehouse, Engine Driven | 3950 |

| | | | |
|---|---|---|---|
| 42 | PB | Truck, Forklift, Electric, 4000, Lbs., and Above | 3930 |
| 43 | PC | Truck, Forklift, Gas Engine Driven, 4000 Lbs., and Above | 3930 |
| 44 | PE | Tractor, Wheeled, Warehouse, Electric | 3930 |
| 45 | PE | Tractor, Wheeled, Warehouse, Engine Driven | 3930 |
| 46 | PG | Truck, Forklift, Rough Terrain | 3930 |
| 47 | PI | Truck, Forklift, Diesel Engine Driven | 3930 |
| 48 | QB | Generator Set, Skid Mounted, 15 kw and Above | 6115 |
| 49 | QB | Generator Set, Trailer Mounted, 15 kw and Above | 6115 |
| 50 | QB | Generator Set, Truck Mounted, 15 kw and Above | 6115 |
| 51 | QB | Generator Set, Wheel Mounted, 15 kw and Above | 6115 |
| 52 | QC | Compressor, Skid Mounted, 125 CFM, 100 psi and Above | 4310 |

| | | | |
|---|---|---|---|
| 53 | QC | Compressor, Trailer Mounted, 125 CFM, 100 psi and Above | 4310 |
| 54 | QC | Compressor, Truck Mounted, 125 CFM, 100 psi and Above | 4310 |
| 55 | QC | Compressor, Wheel Mounted, 125 CFM, 100 psi and Above | 4310 |
| 56 | QD | Pump, Centrifugal, Water, Eng. Driven, Skid Mounted | 4320 |
| 57 | QD | Pump, Recip., Water, Engine Driven, Skid Mounted | 4320 |
| 58 | QG | Welding Machine, Skid Mounted | 3431 |
| 59 | QG | Welding Machine, Trailer Mounted | 3431 |
| 60 | QU | Truck, Fire Fighting Equipment Engine Driven (All) | 4210 |
| 61 | QU | Pump, Fire Fighting Equip., Trailer Mtd | 4210 |
| 62 | SY | Snow blower, Self Propelled | 3825 |
| 63 | SY | Snow blower, Truck Mounted | 3825 |

**Table 1-5 Equipment Usage Standards in USACE**

| ECC | FSC | Nomenclature | Usage Standard in % (Minimum) | Usage Standard in % (Objective) |
|---|---|---|---|---|
| LE | 1925 | Boat, Tow | 45 Days | N / A |
| LE | 1925 | Boat, Tug | 45 Days | N / A |
| LG | 2010 | Propelling Unit, Outboard, 100 HP and Larger | 45 Days | N / A |
| LH | 3950 | Crane, Barge Mounted | 45 Days | N / A |
| LH | 3950 | Derrick, Crane Barge | 45 Days | N / A |
| Miscellaneous | | Capatilized equipment not listed in this table (see ER 37-2-10, Chapter 1) | 45 Days | N / A ( Provisions of this exception apply ONLY to the minimum standard, NOT data collection. |
| NB | 3825 | Distributor, Water, 1000 Gal and Above | 10 | 25 |
| NB | 3895 | Mixer, Concrete, Trailer Mounted | 10 | 25 |
| NB | 3895 | Mixer, Concrete, Truck Mounted | 10 | 25. |
| NC | 3805 | Scraper, Earthmoving, Self Propelled | 15 | 30 |
| NC | 3805 | Scraper, Earthmoving, Towed | 15 | 30 |
| ND | 2430 | Tractor, Full Tracked, with Backhoe/Loader | 20 | 40 |
| ND | 2430 | Tractor, Full Tracked, w/ Bulldozer, High Speed | 20 | 40 |
| ND | 2430 | Full Tracked, with Bulldozer, Low Speed | 20 | 40 |
| ND | 2420 | Tractor, Wheeled, Industrial, With Bulldozer | 20 | 40 |
| ND | 2420 | Tractor, Wheeled, with Backhoe/Loader | 20 | 40 |

| | | | | |
|---|---|---|---|---|
| ND | 2420 | Tractor, Wheeled W/Backhoe, W/Loader | 20 | 40 |
| NE | 3805 | Grader, Road Motorized | 15 | 30 |
| NF | 3810 | Crane, Crawler Mounted | 15 | 30 |
| NF | 3810 | Crane, Truck Mounted | 15 | 30 |
| NF | 3810 | Crane, Wheel Mounted | 15 | 30 |
| NF | 3810 | Crane Shovel, Crawler Mtd | 15 | 30 |
| NF | 3810 | Crane Shovel, Truck Mounted | 15 | 30 |
| NF | 3805 | Excavator, Multi-Purpose, Crawler Mounted | 15 | 30 |
| NF | 3895 | Excavator, Multi-Purpose, Truck Mounted | 15 | 30 |
| NG | 3895 | Loader, Scoop, Engine Driven, Full Tracked | 15 | 30 |
| NG | 3820 | Loader, Scoop, Engine Driven, Wheel Mounted | 15 | 30 |
| NH | 3820 | Roller, Motorized, Engine Driven | 10 | 25 |
| NH | 3820 | Roller, Vibratory, Self Propelled | 10 | 25 |
| NJ | 3820 | Drill, Truck Mounted | 20 | 30 |
| NJ | 3820 | Drill, Pneumatic Drifter, Crawler Mtd | 20 | 30 |
| NJ | 3820 | Truck, Well Drill Support | 20 | 30 |
| NN | 3895 | Truck, Concrete Mixer, CCE | 10 | 25 |
| NN | 3805 | Truck, Dump, CCE, 20T | 20 | 40 |
| NV | 3820 | Auger, Earth, Skid Mounted, Engine | 10 | 25 |

| | | | | |
|---|---|---|---|---|
| NV | 3820 | Auger, Earth, TRK Mounted | 10 | 25 |
| NV | 3805 | Compactor, Motorized | 10 | 25 |
| NV | 3805 | Ditching Machine, Engine Driven | 10 | 25 |
| NV | 3895 | Hammer, Pile Driven, Self Powered, (All | 15 | 25 |
| NV | 3825 | Sweeper, Rotary, Self Propelled | 10 | 25 |
| PA | 3930 | Crane Truck, Warehouse, Electric | 10 | 35 |
| PA | 3930 | Crane Truck, Warehouse, Engine Driven | 20 | 35 |
| PB | 3930 | Forklift, Electric, 4000 Lbs. and Above | 15 | 25 |
| PB | 3930 | Truck, Forklift, Gas Engine Driven, 4000 Lbs. and Above | 25 | 50 |
| PE | 3930 | Tractor, Wheeled, Warehouse, Electric | 25 | 50 |
| PE | 3930 | Tractor, Wheeled Warehouse, Engine Driven | 25 | 50 |
| PG | 3930 | Truck, Forklift-Rough Terrain | 25 | 50 |
| PI | 3930 | Truck, Forklift, Diesel Engine Driven | 25 | 50 |
| QB | 6115 | Generator Set, Skid Mounted, 15 Kw & Above | 20 | 40 |
| QB | 6115 | Generator Set, Trailer Mounted, 15 Kw & Above | 20 | 40 |
| QB | 6115 | Generator Set, Truck Mounted, 15 Kw & Above | 20 | 40 |

| | | | | |
|---|---|---|---|---|
| QB | 6115 | Generator Set, Wheel Mounted, 15 Kw & Above | 20 | 40 |
| QC | 4310 | Compressor, Skid Mounted, 125 CFM, 100 psi and Above | 15 | 30 |
| QC | 4310 | Compressor, Trailer Mounted, 125 CFM, 100 psi and Above | 15 | 30 |
| QC | 4310 | Compressor, Truck Mounted, 125 CFM, 100 psi and Above | 15 | 30 |
| QC | 4310 | Compressor, Wheel Mounted, 125 CFM, 100 psi and Above | 15 | 30 |
| QD | 4320 | Pump, Centrifugal, Water, Engine Driven, Skid Mounted | 10 | 20 |
| QD | 4320 | Pump, Reciprocating, Water, Engine Driven, Skid Mounted | 10 | 20 |
| QG | 3431 | Welding Machine, Skid Mounted | 20 | 40 |
| QG | 3431 | Welding Machine, Trailer Mounted | 20 | 40 |
| QU | 4210 | Truck, Fire Fighting Equipment Engine Driven | 10 | 20 |
| QU | 4210 | Pump, Fire Fighting, Trailer Mounted | 10 | 20 |
| SY | 3825 | Snow-blower, Self propelled | 10 | 20 |
| SY | 3825 | Snowplow Truck Mounted | 10 | 20 |

# CHAPTER 2

## MAINTENANCE PLAN

2-1. Purpose. The Maintenance Plan formally describes the methods an activity uses to perform its maintenance on personal property. The maintenance plan may be written so as to provide flexibility at district level, and still ensure conformance with the objectives of ER 750-1-1.

2-2. Applicability. A maintenance plan and sub-plans should be written in enough detail to give recently assigned personnel a firm grasp of how maintenance is to be accomplished in the activity.

a. Maintenance plans within USACE may differ with organizational structures and missions. Even so, the basic maintenance plan structure should be uniform throughout USACE.

b. A maintenance plan must be thorough and concise to be of any practical value.

c. Maintenance personnel at all levels must be familiar with the plan and the plan must be followed by all personnel.

d. All activities that perform maintenance are required to have a Maintenance Plan in accordance with ER 750-1-1.

2-3. General Information. As a minimum, the following areas of the Maintenance Plan should be addressed in detail:

a. Maintenance related duties and responsibilities for key activity personnel.

b. Procedures to be followed by personnel during scheduled operator level Preventive Maintenance Checks and Services (PMCS) periods.

c. Procedures to be followed by all personnel that have a role in activity level PMCS. (These are scheduled services).

d. Procedures used to check out (dispatch) personal property in the activity.

e. Procedures required to obtain a government equipment operator’s license.

f. Tool accountability and control procedures.

g. Quality control procedures for maintenance actions and dispatching personal property.

h. Calibrations of test, measurement, and diagnostic equipment (TMDE) and tools.

I. Requirements of the Oil Analysis Program (OAP).

j. Environmental considerations that include proper procedures for handling and disposing of hazardous chemicals.

k. Safety precautions and guidance associated with equipment maintenance.

l. Publications.

m. Repair Parts and shop security procedures and policy .

n. Sub-plans, when needed for activity operational elements, will be included in an appendix to the activity's maintenance plan.

o. A Consolidated Equipment List, or a reference to where this information can be found will be included in an appendix to the activity's the maintenance plan.`

# CHAPTER 3

# OPERATIONAL RECORDS

3-1. General**.** This chapter describes the maintenance plan requirements for equipment operations. Maintenance plans that meet these requirements satisfy ER 750-1-1.

3-2. Equipment Operation**.**

a. Equipment usage. In order to facilitate decision making related to maintenance and life cycle property management, and to properly allocate operating costs, each district shall describe in its maintenance plan a method for tracking personal property usage. Use of ENG Form 3662 is one means of satisfying this requirement (See Appendix B, Figure B-3).

b. Equipment control. The activity maintenance plan shall describe a method to identify the responsible party and the location of the personal property. Use of DA Form 2401 is one means of satisfying this requirement (See example in Figure B-1.

c. Checkout procedures. The activity maintenance plan shall describe the method to inspect and ensure personal property is ready for service, to identify faults found, and to inform the maintenance coordinator of inspection results. Use of DA Form 2404 is one means of satisfying the requirement (See example in Appendix B, Figure B-6).

3-3. Equipment Record Folders**.**

a. An equipment record folder will be maintained for each item of personal property managed in accordance with the maintenance plan. Use of the Army Equipment Record Folder (**National Stock Number, 7510-00-889-3494**), is one means of satisfying the requirement.

b. The equipment record folder should be available each time an item of personal property is operated and should contain the necessary forms required during operation, as specified in the maintenance plan.

c. The folder shall contain the following items:

(1) Preventive maintenance checks and services checklist.

(2) Accident report forms (using SF 91 and DD Form 518 is one way to satisfy this requirement). Please refer to Appendix B, Figure B-15 and Figure B-16.

(3) Warranty information, if applicable.

(4) An inspection report (for example, DA Form 2404, Appendix B, Figure B-6).

(5) Usage record (for example, ENG Form 3662, Appendix B, Figure B-3).

3-4. Equipment Identification Cards (EIC)

a. The EIC may be used to tie an equipment record folder to an item of personal property.

b. The EIC is located on the outside of each equipment record folder. The information on the card is used to identify the personal property and may be used to keep track of services due.

c. The district maintenance plan will identify the EIC for local use, but DA Form 5823 is suggested (See Appendix B, Figure. B-13**)**. The EIC shall contain the following information:

(1) Name of the Maintenance Coordinator.

(2) Bar code number.

(3) Administrative number assigned locally for property identification or license tag number.

(4) Make and model.

(5) Serial number.

d. The maintenance plan may also specify recording the following information on the EIC:

(1) Next scheduled service and (or) lube date and the hours or miles when due (pencil entry).

(2) The date or hours the next OAP sample is due (pencil entry).

3-5. Equipment Lists**.**

a. Purpose. To assist Maintenance Coordinators in managing and maintaining their personal property and to help identify personal property for temporary reassignment during emergencies.

b. The equipment list will be maintained by all Maintenance Coordinators. Maintenance Officers will also arrange to have their own access to a consolidated list. The activity's property book records is one source for this list. The consolidated list shall contain these items:

(1) Equipment bar code number.

(2) Equipment administrative number or license tag number.

(3) Equipment description.

(4) Name or position of the Maintenance Coordinator responsible for each item of personal property.

(5) Equipment location and organizational code, if applicable.

# CHAPTER 4

# MAINTENANCE RECORDS

## 4-1. General.

a. This chapter provides examples of maintenance forms. The information in this chapter is only provided for those that chose to use it.

b. The forms in this chapter help in scheduling, performing, recording, and managing maintenance actions on personal property.

c. The forms record the result of inspections, tests, and completed maintenance actions. They link related supply and maintenance actions, and also show results of diagnostic checks.

## 4-2. DA Form 2404, Equipment Inspection/Maintenance Worksheet (Figure B-6 through B-9).

a. Purpose. DA Form 2404 has two major purposes. This form is the central record for managing and controlling maintenance as follows:

(1) It is a record of faults found during an inspection. Faults to record include those found during PMCS, maintenance activity inspections, diagnostic checks, and spot checks.

(2) It shows faults and repairs required to restore damaged property and may serve as an Estimated Cost of Damages (ECOD).

b. Use. As stated, the DA Form 2404 is used by personnel performing inspections, maintenance services, diagnostic checks, technical evaluations, and marine condition surveys on watercraft.

(1) It may be used to inspect an entire equipment system or all its components and (or) subsystems that join to make up one equipment system. For example, a truck mounted crane may use one form for the crane and one for the carrier.

(2) A single form may be used to inspect several like items of personal property.

(3) This form can be used as a temporary record of required and completed maintenance. In this case show needed services until they are transferred to DD Form 314 (Figure B-2). When property is inoperable, file a 2404 in the property's record folder to show the cause for this status.

(4) Operators may used this form to list problems that are fixed by replacing parts and those the operator is unable to repair.

(5) Activity maintenance personnel may use this form during periodic services to list faults found and repair actions taken to fix them. When used to inspect several like items, the DA Form 2404 will list all deficiencies, shortcomings, and corrective action taken.

(6) This may be used to record actions taken by maintenance personnel, to include documenting repair parts ordered and recording maintenance that is deferred until the next scheduled service.

(7) It may be used on initial inspections by support or contract maintenance shops to list faults. The initial inspection should be attached to the work order that will be given to the mechanic. The DA Form 2404 will be used as the worksheet for correcting faults found and reporting activity level faults not repaired. Results of maintenance actions will be entered on the work order. For contract maintenance policy, see ER 750-1-1, paragraph 1-2.

(8) It may also be used on final inspections by support or contract maintenance shops to list faults found. Attach the final inspection to work order that will be given to the mechanic that will correct final inspection faults.

c. General Instructions.

(1) The way some blocks and columns on the DA Form 2404 are filled in may vary with use. Make sure to read the instructions that apply to your circumstances. When you need more than one DA Form 2404 for inspection or service, print page number in the right side of the form's title block.

(2) Information on the form should be current, correct, and easily understood by all.

(3) A form used for PMCS on an item will be kept in the property's record folder until all actions are completed or no longer needed, or until a fault is found. (See Figure B-6).

(4) Parts on order or actions pending under anticipated not mission capable (ANMC) conditions may go on the inspection record with a diagonal status symbol.

d. Disposition.

(1) As mentioned, the DA Form 2404 will be kept in the equipment record folder or in a protective cover until it is completed. If faults are found during operator PMCS, the form will be

forwarded to the Maintenance Coordinator. The form is kept until uncorrected faults are moved to other forms, or until all faults are fixed and the required data transferred to historical records.

(a) Maintenance section leaders will review the DA Form 2404 prior to destruction to ensure all corrective actions have been completed.

(b) Faults that must be deferred or that cannot be fixed until a part is received, should be reflected on DA Form 2404, showing the requisition number as action taken.

(c ) Transfer faults that must be fixed at higher echelons to a work order and attach DA Form 2404.

(d) Status symbol "X" faults can go on DA Form 2404. When there is a NMC deficiency on DA Form 2404, keep it until the deficiency has been repaired. This includes the form on equipment sent to support maintenance. The form will be kept in the equipment record folder (or some other local method) so that this personal property is not dispatched.

(2) The DA Form 2404 used for scheduled services will be kept on file for quality control until the next service is performed. All uncorrected faults will be moved to a new DA Form 2404 or work order and services will be recorded on the DD Form 314. Forms carrying an "X" status will be kept until faults are corrected.

(3) A form listing a fault that makes personal property inoperable, is kept until the item is repaired and fully operational. Record non-operational time on the reverse side of DD Form 314.

(4) Keep DA Forms 2404 that shows periodic service on personal property that does not have historical records or a DD Form 314. Destroy the earlier form only after later periodic service is done. Open faults at that time will go on the new DA Form 2404.

(5) When this form is used to evaluate or technically inspect property, the form will stay with the item until all maintenance is performed or the item is disposed of. A copy of the technical inspection will go with an item sent to support maintenance or depot for repair or overhaul.

(6) DA Form 2404 used for estimated cost of damage (ECOD) is handled as follows:

(a) Two (2) copies will be attached to copy four (4) of the work order that requested the ECOD. One copy will be returned with the work order that requests repair of the damage.

(b) File the third copy with copy five (5) of the work order, at the supporting activity.

# CHAPTER 5

## OIL ANALYSIS PROGRAM (OAP)

5-1. General**.** Phase I personal property is the military equipment defined in DA PAM 738-750, Chapter 4, and is subject to the Army OAP. This publication also outlines sampling standards for Phase I items.

a. Phase II equipment is to be enrolled in the Army OAP or a civilian program. Phase II sampling standards will be established in the maintenance plan.

b. On watercraft, auxiliary engines are those that are not used for propulsion.

c. Gasoline engines and manual transmissions may **not** be enrolled in the AOAP.

d. Automatic transmissions and hydraulics can **only** be enrolled in the AOAP if the personal property's engine is also enrolled.

5-2. Phase II Equipment**.** Property in this category must meet one of the following criteria:

a. A diesel engine that has an oil capacity of 5 gallons or more.

b. An automatic transmission or gearbox, when coupled with (a) above.

c. Hydraulic system over 5 gallons (excluding brakes) when coupled with (a) above.

d. All watercraft engines, main and auxiliary, meeting the criteria in (a) above.

5-3. Phase III Equipment**.** Real property that meets the criteria in Phase II above, may also be enrolled in the Oil Analysis Program. However, enrollment is not mandatory. Examples are:

a. Pumping Station (Diesel Engines)
b. Hydropower (Diesel Engines)
c. Dredges
d. Mooring Barges

# CHAPTER 6

# EQUIPMENT HISTORICAL RECORDS

## 6-1. Objectives.

a. Historical records are permanent and are maintained on personal property to track it's maintenance history and to show the item's life cycle operational and non operational history.

b. Historical records show trends and data that may used in gauging the economic feasibility of repairing an item versus acquiring a replacement.

c. These records should be consolidated and securely stored in a manner that helps prevents their destruction, damage, or being misplaced.

d. Historical records provide managers valuable information on personal property usage, gains, losses, transfers, modifications, and on the OAP.

e. The only reason that justifies remaking a replacement historical form, is when the record has been lost or damaged so that the data is no longer legible.

f. Historical records will are to be filled out in ink or typewritten, unless specifically stated otherwise in instructions for the form.

## 6-2. Contents.

a. A maintenance history jacket file should be maintained for each equipment item or equipment system, as appropriate.

b. The jacket file should contain such items as maintenance forms, purchase documentation, applicable work orders, and vendor service reports and invoices.

# CHAPTER 7

# WATERCRAFT MAINTENANCE

## 7-1. Maintenance of Watercraft and Amphibians.

a. This chapter gives instructions that are specific to maintenance of USACE watercraft.

(1) All watercraft are divided into the following three classes:

(a) Class A watercraft are self-propelled and are at least 65 feet long.

(b) Class B watercraft are self-propelled and are less than 65 feet.

(c ) Class C watercraft include all floating property that is not self-propelled. Class C watercraft are further divided into two classes:

(1) Class C-1 includes those having berthing facilities and, or machinery on board.

(2) Class C-2 covers the remaining craft that have neither facilities or machinery on board.

## 7-2. Objective.

The objective of watercraft maintenance is to promote fully capable watercraft that are safe, reliable and seaworthy.

a. In order to accomplish these objectives, maintenance tasks are distinctly organized so that some are designated for accomplishment at wholesale level, while others are assigned to retail. maintenance activities. The two categories of tasks are defined in ER 750-1-1.

b. Actual maintenance tasks to be performed are listed in applicable maintenance manuals.

## 7-3. General Maintenance Policies.

a. Emergency repairs. When emergency watercraft repairs are required, but would be more appropriate for accomplishment in dry dock, the required maintenance will be considered a wholesale effort. When this condition exists, perform only those repairs required to correct the emergency. When wholesale repairs are possible, the property must be removed from operation, and then thoroughly repaired in dry dock, before being placed back in full time service.

b. There are times when a watercraft maintenance problem will develop while deployed on

an operational mission and normal corrective action is not possible. When this happens, the vessel master should evaluate the situation, and decide on the best course of action consistent with safety, the welfare of the crew and vessel, and mission accomplishment.

c. On-Condition Cycle Maintenance (OCCM). All watercraft will undergo OCCM in accordance with the intervals established in Table 4-1 of ER 750-1-1. In freshwater cases, the dry dock schedule may be extended, when a waiver and justification is submitted to CECW-O for approval. At a minimum, the following will be performed:

(1) interior and exterior inspection of the hull to the deep load waterline, and

(2) ultrasonic testing of the hull to the deep load waterline.

d. Maintenance. The scope of work to be accomplished during OCCM will vary depending on the condition of the watercraft, the vessel class, resource limitations and other factors. As a minimum, the following maintenance and repair actions will be accomplished during OCCM when indicated during the inspection.

(1) Bottom cleaning and painting up to the deep load waterline.

(2) All repairs below the deep load waterline that are identified during the dry-dock inspection.

(3) All other maintenance and (or) repairs identified by the marine or ship surveyor that are required to effect a permanent change in the watercraft's condition.

e. Maintenance Reporting. Forms and records on watercraft and amphibians will be completed as specified in the maintenance plan, DA Pam 738-750, TB 55-1900-205-24, and TB 55-1900-205-45/1.

f. Dry Dock Schedules. Dry dock schedules for fresh water craft may be extended beyond the intervals established in Table 4-1 of ER 750-1-1, when both of the following conditions are met:

(1) Inspections are performed on a systematic basis and supports an extended schedule.

(2) Test data, such as hull ultrasonic tests, support extending intervals.

# CHAPTER 8

# TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE)

## 8-1. Purpose.

a. This chapter explains the requirements necessary to manage and maintain calibration and repair support for Test, Measurement, and Diagnostic Equipment (TMDE). It is intended to provide general guidance.

b. The following references provide general guidelines to personnel involved in the TMDE program. They explain how the program works, what is required to make it work, and how to ensure that calibration of applicable personal property is successfully and effectively accomplished.

(1) AR 750-43, Army TMDE Program.

(2) TB 750-25, Army TMDE Calibration and Repair Support (CRS) Program.

(3) TB 43-180, Calibration and Repair Requirements for the Maintenance of Army Materiel.

8-2. Applicability. This chapter is applicable to all Corps of Engineer personnel that are responsible to ensure that CRS is provided for the TMDE used in USACE. CRS is a vital link in certifying the accuracy of the personal property used by Corps workers.

## 8-3. General Information.

a. Maintenance managers should identify all TMDE that requires CRS and should arrange for the appropriate TMDE Support Activity to provide this service on property that is not supported at activity level. **Table 1-2** identifies these support providers, assigned to the U.S. Army TMDE Activity (USATA).

b. Repair support will normally be based on the concept that repairs should be performed by the **Table 1-2** element, listed as being responsible for CRS.

Paragraph 9-1was superseded by ER 700-1-1, 2 October, 2000.
The balance of the document remains current.

# CHAPTER 9

# EQUIPMENT MANAGEMENT

9-1. Personal Property Usage (Refer to Tables 1-4 and 1-5**).** Usage standards serve as a yardstick that is valuable in measuring how effective we are in getting our money's worth from the resources we invest in equipment. Obviously, we want to get the most usage at the lowest possible cost, while at the same time we are adequately staffed and equipped to complete all assigned missions. Recording usage data and comparing our results with established corporate or industry standards, gives our managers insight on ways we can improve our productivity and efficiency. Historical property usage data allow us to make informed management decisions.

a. Minimum standard in days. Floating plant property identified in ER/EP 1130-2-500, will be tracked in USACE, to determine if it meets the standard of 45 days minimum annual use. This rule will also apply to all capitalized (in financial records) property that does not directly, indirectly or logically fall into any of the other property categories listed in Table 1-5. The miscellaneous category was created to ensure all applicable property will have an established standard as a usage goal to attain.

b. Usage standards measured in percentages. Personal property not identified in ER 1130-2-500, but is included in the Equipment Usage Tracking List, **Table 1-4**, should have usage tracked, recorded and the usage history compared to the usage standard percentages listed in **Table 1-5**, to determine if our equipment falls short, meets, or exceeds the applicable standard.

c. Exceptions. Property that meets the criteria in Appendix H, is exempt from usage tracking requirements. These exceptions are also listed in Chapter 3, Section IV, of ER 700-1-1.

9-2. Basis for Computations. Usage standards are generally expressed in terms of hours, days, or time used. The computations may be based on any consecutive twelve-months period and are calculated as follows:

a. Workweek. Consist of a 40-hour workweek of four 10-hour days or five 8-hour days, less Federal holiday. In other words, deduct 8 hours for each holiday in the reporting period.

b. Operational hours. The base figures of 168 hours per month or 2016 hours per year are used, less the non operation hours the equipment is in maintenance.

c. Operational days. The base figure is the total workdays in a year less the days in maintenance. A year has 251 workdays (365 minus 104 weekend days and 10 holidays = 251 days). Each month, subtract weekend days, holidays, and days in maintenance, from total days.

d. Other basis. A base figure may be developed locally for items that have usage expressed in terms other than the above, for example, rounds fired, experiments conducted or miles of operation.

9-3. Computing Use Percentages**.** Use percentages are computed as shown below. Workweek percentages are computed as shown above in paragraph 9-2a . Computerized programs may use 2000 miles or 168 hours per month as appropriate, for prime shift periods. Hours in excess of this amount will be allotted to extra shift operations.

a. Determine the usage on equipment that is designated by USACE for tracking, using one of the following formulas, as applicable:

(1) To compute the use percentage for personal property with miles as the basis, multiply the total miles used during the annual period by 100 and divide the product by the objective mileage.

(2) To compute the monthly use percentage for personal property with operational hours as the basis, multiply the total hours used in a month by 100 and divide the product by operational hours.

(3) To compute the annual use percentage for personal property with operational hours as the basis, multiply the total hours used in a year by 100 and divide the product by the number of operational hours in the annual period. Another method is to find the yearly average by adding the monthly usage percentage for 12 consecutive months and divides the sum by 12.

(4) To compute the monthly use percentage for personal property with operational days as the basis, multiply the number of days the personal property is operated per month by 100 and divide the product by the number of operational days in the month.

(5) To compute the annual use percentage for personal property with operational days as the basis, multiply the number of days the personal property is operated per year by 100 and divide the product by the number of operational days in the annual period.

(6) Each month, usage data should be collected and recorded for each item of personal property operated during the month, that meets the USACE criteria for tracking. ENG Form 3662 will be used for this purpose. The data should be retained for future use in making equipment management decisions. ER 700-1-1, paragraph 3-26, explains a method for consolidating monthly and quarterly usage data. An automation system may be used to capture this data if available.

b. Compute the usage percentages for other personal property by locally devised formulas when days, hours, or miles are not an appropriate basis for usage. Show local formulas in the periodic personal property usage and availability data reports, described in paragraph 3-26, of ER 700-1-1.

9-4. Recording Maintenance Costs for Parts and Labor**.** Chapter 5, of ER 750-1-1 explains the importance of collecting, recording, and using historical maintenance cost information as part of an equipment management program. USACE activities will document maintenance costs using DA Form 2409, Equipment Maintenance Log. Section B, Maintenance Inspection Record, pertains to preventive maintenance (PM) costs and Section C, Repair and Cost Record, is used for repair costs. In each case, record entries for total parts, total labor, and for the sum these two categories. Section D, will not be used in USACE.

9-5. Equipment Operational Rates**.** Equipment Operational Rates show the relationship between up time and down time in percentages. This numerical relationship is also referred to as operational availability and DoD has set equipment readiness goals or standards for Defense activities to attain. Groups of personal property in USACE that have been designated as readiness significant are listed below.

a. In general terms, most USACE equipment may be grouped into categories as follows: Construction and Engineering, Material Handling, Support, and Watercraft. The following types of equipment will be tracked for operational rates:

(1) Construction Equipment

(2) Special Purpose Equipment

(3) Material Handling Equipment

(4) Watercraft/Amphibious

(5) Support Equipment - Generators

(6) Support Equipment - Air Compressors

(7) Support Equipment - Pumps

(8) Support Equipment - Well Driller

b. Some end items may have subsystems (components) that affect the overall capability of the item. When determining if the end item is mission capable (green), consider the effect that a non operational component would have on the ability of the end item to complete its assigned mission. If the end item cannot complete the assigned mission due to a component failure, then the end item should be reported as not mission capable (red). If the component failure does not interfere with mission completion, the end item is considered mission capable (green).

c. Operational Criteria. The command's goal is to achieve equipment operational readiness rates that are 85 per cent or higher. The following definitions are provided for your use:

(1) Status Green refers to operational rates that are 85 per cent or higher.

(2) Status Amber refers to rates that range between 75 and 84 per cent (inclusive).

(3) Status Red refers to rates that are 74 per cent or lower.

(4) Reporting Periods:

(a) 1st Qtr - 1 Oct. - 31 Dec. = 92 possible days.

(b) 2nd Qtr - 1 Jan. - 31 Mar. = 90 possible days. (Add one day for a leap year)

(c ) 3rd Qtr - 1 Apr. - 30 Jun. = 91 possible days.

(e) 4th Qtr - 1 Jul. - 30 Sep. = 92 possible days.

d. Equipment On-hand Quantity: The total quantity for each reportable item shown in **Table 1-4**, that the property book reflects as on-hand in the activity, on the last day of the reporting period.

e. Possible Days: The total number of days the equipment was on hand during the reporting period (i.e., 1 item = 92 days, 2 items' = 184 days in the 1st Qtr). Count from the property book date of receipt to the end of the reporting period, to find possible days for recently received property.

f. Non available Days: The number of days the personal property was not able to perform its intended mission. If the property is not mission capable at the end of the normal work day, it is considered non available the entire day. If the property is repaired prior to the end of the normal work day, it is considered available for the entire day.

g. Available Days: The total possible days minus the Non available days.

h. Operational Rate: The percentage of available days based on the possible days. Formula: Total available days divided by the total possible days, multiplied by 100 equals the operational rate, expressed as a percentage. **Example: Available Days (100) = Operational Rate Possible Days**